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Measuring the Effect of Conflict on Oil Production and Prices

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Measuring the Effect of Conflict on Oil Production and Prices

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Abstract

This paper examines the degree to which armed conflict interrupts oil production, and the effects of these supply shocks on the region-specific oil prices. By measuring the effect of conflict on oil output, I aim to quantify one important and underexamined economic cost of conflict. By examining the effect on oil prices, I hope to provide new empirical evidence on the global demand curve for oil and the substitutability of demand across alternative oil types.

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I. Introduction

This paper examines the degree to which armed conflict interrupts oil production, and the effects of these supply shocks on the region-specific oil prices. By measuring the effect of conflict on oil output, I aim to quantify one important and underexamined economic cost of conflict (Bilmes and Stiglitz, 2006). By examining the effect on oil prices, I hope to provide new empirical evidence on the global demand curve for oil and the substitutability of demand across alternative oil types.

The question of the relationship between war and economic performance is relevant because war "is associated with changes in productive capacity and institutions," (Koubi, 2005) both indicators of economic well being. Koubi's analysis comes to the conclusion that while "political instability and policy uncertainty have significant negative effects on growth," that "Protracted and/or severe wars are conducive to higher growth." (Koubi, 2005). Intuitively, these results seem contradictory, which merits further examination.

Existing literature affirms oil's role as an essential subset of the world economy. In addition to being the world's leading energy source, oil "is critical to the global production of goods and service and has moved in tandem with changes in gross national product." (Carlstrom and Fuerst, 2006).

Conflict often has far-reaching consequences. This paper attempts to explore what those ramifications are for oil producing countries with neighbors who have conflict, as well as the nature and extent of these relationships through consideration of country- and year-level data of crude oil production and prices ranging from 1960 to 2007 and how that is affected by country- and year-level data of armed conflict casualties ranging from 1946 to 2007.

Crude oil quality is not monolithic; it varies from well to well. The varying quality of the crude oil means that oil extracted from different wells is sold at different prices. [1] For example, a barrel of West Texas Intermediate crude oil from oil fields in the Texas region of the United States sells for a different price than a barrel of North Sea Brent Crude from wells offshore of the United Kingdom. These blends are priced differently based on their sulfur content and viscosity.

Countries that feature blends that are primarily drilled offshore tend to have a higher price. The isolation of off shore production facilities greatly increases the cost of production there relative to on shore facilities. However, this isolation can also provide a benefit. Conflict tends to be a land-based occurrence, so off shore production often goes unaffected by any sort of unrest. As a result, in conflict-prone countries that have reserves in coastal areas (Angola for example) typically see a disproportionately large amount of off shore facilities.

Exploration for reserves of crude oil has been the subject of competitive pursuit for decades (See Yergin, 2003). Most major discoveries on shore occurred in the 1960's and 1970's, and the consensus is that there are few remaining major on shore discoveries to be made. Off shore production is seen as the leading edge of expanding production. Because of the great amount of capital investment required for such undertakings, significant resources are directed to geological

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[1] Special thanks to Chris Scholz, Assistant Professor of Geology at Syracuse University. Professor Scholz graciously spent a great deal of time explaining the intricacies of oil production.

study to determine the magnitude as well as the type of crude stored in a given reserve. There is a disparity in the aggressiveness in pursuing these discoveries between privately held companies and nationalized oil exploration companies. Where privately held companies have to report their bottom lines to share holders, nationalized companies are backed by a sovereign government with somewhat less concern for the bottom line. Additionally, oil discoveries often are pursued with a nationalistic zeal by many of these companies; they are willing to take greater risks as part of the payoff is not just the revenue generated by the crude oil produced but the prestige lent by oil production.

Figure 1 shows the disparity in oil production in Angola over time. The period prior to 2002 has limited oil production, where post-2002, oil production surges. In 2002, a decades long civil war in Angola drew to a close, suggesting that this conflict had a depressive effect on oil production.

Figure 2 outlines two concepts. First, trends in Iraqi oil production are in itself a case study in the effect of conflict on oil production. Second, the relationship between conflict and oil production in neighboring countries, Iraq and Kuwait, over the course of several years where multiple conflicts occurred illustrates the effects of neighbor conflicts.

An ordinary least squares regression and several fixed effects regressions based on this data consistently show higher intensity conflict (more than 25 battle deaths) to have a more negative effect on oil production than lower intensity conflict (25 or fewer battle deaths). Fixed effects regressions showed a corresponding greater increase in oil price for higher intensity conflicts.

Regressions accounting for neighboring conflict returned similar results, showing conflict within a given country of higher intensity having a more negative effect on output than those of less intensity. The effect of neighboring conflict on output is less clear; regressions accounting for country and year fixed effects reveal a less positive effect on output of high intensity neighbor conflict compared to lower intensity neighbor conflict.

The effects of neighbor conflict on oil prices are very similar to the effect of conflict on oil prices, that is slightly negative (when accounting for country and year fixed effects), although those results were rarely significant.

The remainder of the paper proceeds as follows: Section II. Data, Section III. Informal Results, Section IV. Model, Section VI. Results, Section VII. Discussion and Conclusion, Section VIII. References and Section IX. Tables and Figures.

II. Data

This paper combines data from British Petroleum, the U.S. Energy Information Administration, the Penn World Tables, the C.I.A. World Factbook and UPPSALA conflict data.

From the British Petroleum data set, country-level data by year was used for proved reserves and oil production. The production data ranges from 1966 to 2007, where the proved reserves data runs from 1980 to 2007. While there are some gaps in the data in the first 20 years, there are relatively few in the last 21 years.

The U.S. Energy Intelligence Agency data provided pricing data for the benchmarks North Sea Brent Crude and West Texas Intermediate, intermittently going back to January 1978. It provides data for other blends of oil going back to 1985 or 1986, depending on the blend. Using the descriptions and further research, I matched each blend with the country(/ies) where they are produced.

The Penn World Tables provided complete country- and year-level data on population, and real gross domestic product per capita from 1960 to 2006.

The C.I.A. Factbook provided each country's land area. A limitation of this data is that the land area is that country's present land area, and borders are subject to change. A mitigating factor for the analysis presented by this paper is that oil producing areas are valuable to the countries that posses them, thus they would be more resistant to allowing that land area to change hands.

The UPPSALA dataset provided a comprehensive overview of all recorded conflicts in the world since 1946. It distinguished between conflicts with less than 25 battle deaths and those with 25 or greater battle deaths.

To determine which countries were neighbors with one another, I looked at the CIA World Factbook map of each country. If a country shared a border, it was considered a neighbor—be it one established by an arbitrary line or by a natural boundary (i.e., ridgeline or river). Bodies of water separating countries were dealt with largely on a case-by-case basis, focusing on navigability. For example, Egypt and Saudi Arabia were considered neighbors because of the proximity of the two across the Red Sea near the Sinai Peninsula, as well as the significant amount of commerce that transits that body resulting from the Suez Canal.

III. Informal Results

A rudimentary examination of oil production data reveals a great deal about its relationship to conflict, as well as other economic factors. To illustrate the estimation strategies in this paper, consider the following case studies.

Figure 1 examines the case of Angolan oil production. From 1965 to 2002, production grows at a steady but slow pace. During this period, Angola was marred by a civil war, which was actually series of distinct but related conflicts. A partial explanation of how any growth in oil production occurred during this period could be the nature of Angola's oil reserves. Much of these reserves lay in coastal regions, and can be tapped via off-shore drilling rigs. These rigs can be as far away as 50 miles from shore, effectively isolating them from any events on land. In 2002, the Angolan conflict was effectively concluded, paving the way for oil exploration to occur on-shore—making available reserves that previously could not be reached safely. This is the strongest example of a peace dividend, similar to that in Iraq in 1988.

Figure 2 illuminates important points about both Iraqi the effect of conflict on oil production and the oil production of Iraq and Kuwait together, to better judge the regional and neighbor effects of conflict. A marked falloff in both Iraqi and Kuwaiti oil production occurs in 1980, the same year that the Iran-Iraq War began. As discussed earlier, this conflict had ramifications that extended beyond the belligerents; it made commerce difficult, if not dangerous on the Persian Gulf.

As the war waned, Iraqi oil production began to recover, and to a smaller extent, so did Kuwaiti oil production. All of this recovery went for naught as both

Kuwait and Iraq experienced a significant downturn in production in late 1990 at the onset of the First Gulf War. In the aftermath of the war, heavy economic sanctions were levied against Iraq, the result being a surge in Kuwaiti oil production. During this period, international sanctions against Iraq act as an omitted variable in regressions. Again in 2003 with the onset of the Second Gulf War, Kuwait benefits from Iraq defying the international community. While Iraqi oil production declines, Kuwaiti oil production increases, almost matching the amount of the decline in Iraqi oil production.

IV. Model

In this section, I will formalize the intuition discussed in the informal results section of this paper through four groupings of regressions.

A. OLS and Fixed Effects Estimates of Conflict on Oil Output

Ordinary least squares estimates of the effects of conflict on oil output were modeled as follows:

$$\text{(1) } \textit{Oil output}_{i,\mathrm{y}} = \alpha_1(\textit{Minor Conflict}_{\mathrm{c,y}}) + \alpha_2(\textit{Major Conflict}_{\mathrm{c,y}}) + \varepsilon_{\mathrm{c,y}}$$

Fixed effects regressions were modeled as follows:

$$\text{(2-10) } \textit{Oil output}_{c,\mathrm{y}} = \beta_1(\textit{Minor Conflict}_{\mathrm{c,y}}) + \beta_2(\textit{Major Conflict}_{\mathrm{c,y}}) + \beta_3(X_{\mathrm{c,y}}) + \varepsilon_{\mathrm{c,y}}$$

Controls, such as population, gross domestic product, land area, oil reserves, oil prices, global output, region dummies, year and year squared, country fixed effects and year fixed effects, represented by the matrix of $X_{\mathrm{c,y}}$, were introduced in successive regressions, as outlined in the table.

B. OLS and Fixed Effects Estimates of Conflict on Oil Prices

Ordinary least squares estimates of the effects of conflict on oil prices were modeled as follows:

$$\text{(1) } \textit{Oil price}_{c,\mathrm{y}} = \delta_1(\textit{Minor Conflict}_{\mathrm{c,y}}) + \delta_2(\textit{Major Conflict}_{\mathrm{c,y}}) + \varepsilon_{\mathrm{c,y}}$$

Fixed effects regressions were modeled as follows:

$$\text{(2-8) } \textit{Oil price}_{c,\mathrm{y}} = \phi_1(\textit{Minor Conflict}_{\mathrm{c,y}}) + \phi_2(\textit{Major Conflict}_{\mathrm{c,y}}) + \phi_3(X_{\mathrm{c,y}}) + \varepsilon_{\mathrm{c,y}}$$

Controls, such as population, gross domestic product, land area, oil reserves, oil prices, global output, region dummies, year and year squared, country fixed effects and year fixed effects, represented by the matrix of $X_{\mathrm{c,y}}$, were introduced in successive regressions, as outlined in the table. Running separate regressions for prior to and after 1982 as in Table 1 proved unnecessary as oil price data for blends matched with a country experiencing conflict existed only after 1985.

C. OLS and Fixed Effects Estimates of Neighboring Conflict on Oil Output

Ordinary least squares estimates of the effects of conflict in a neighboring country on oil output were modeled as follows:

$$(1)\ \textit{Oil output}_{c,y} = \beta_1(\textit{Minor Neighbor Conflict}_{c,y}) + \gamma_2(\textit{MajorNeighbor Conflict}_{c,y}) + \gamma_3(\textit{Minor Conflict}_{c,y}) + \gamma_4(\textit{Major Conflict}_{c,y}) + \varepsilon_{c,y}$$

Fixed effects regressions were modeled as follows:

$$(2\text{-}10)\ \textit{Oil output}_{c,y} = \theta_1(\textit{Minor Neighbor Conflict}_{c,y}) + \theta_2(\textit{MajorNeighbor Conflict}_{c,y}) + \theta_3(\textit{Minor Conflict}_{c,y}) + \theta_4(\textit{Major Conflict}_{c,y}) + \theta_5(X_{c,y}) + \varepsilon_{c,y}$$

Controls, such as population, gross domestic product, land area, oil reserves, oil prices, global output, region dummies, year and year squared, country fixed effects and year fixed effects, represented by the matrix of $X_{c,y}$, were introduced in successive regressions, as outlined in the table.

D. OLS and Fixed Effects Estimates of Neighboring Conflict on Oil Prices

Ordinary least squares estimates of the effects of conflict in a neighboring country on oil prices were modeled as follows:

$$(1)\ \textit{Oil price}_{c,y} = \sigma_1(\textit{Minor Neighbor Conflict}_{c,y}) + \sigma_2(\textit{Major Neighbor Conflict}_{c,y}) + \sigma_3(\textit{Minor Conflict}_{c,y}) + \sigma_4(\textit{Major Conflict}_{c,y}) + \sigma_5(X_{c,y}) + \varepsilon_{c,y}$$

Fixed effects regressions were modeled as follows:

$$(2\text{-}8)\ \textit{Oil price}_{c,y} = \psi_1(\textit{Minor Neighbor Conflict}_{c,y}) + \psi_2(\textit{Major Neighbor Conflict}_{c,y}) + \psi_3(\textit{Minor Conflict}_{c,y}) + \psi_4(\textit{Major Conflict}_{c,y}) + \psi_5(X_{c,y}) + \varepsilon_{c,y}$$

Controls, such as population, gross domestic product, land area, oil reserves, oil prices, global output, region dummies, year and year squared, country fixed effects and year fixed effects, represented by the matrix of $X_{c,y}$, were introduced in successive regressions, as outlined in the table. Running separate regressions for prior to and after 1982 as in Table 3 proved unnecessary as oil price data for blends matched with a country experiencing conflict existed only after 1985.

V. Results

A. OLS and Fixed Effects Estimates of Conflict on Oil Output

Estimates of the effect of conflict on oil output consistently showed that the effect of major conflict were significantly more negative than the effect of minor conflict, the extent of which varied with each regression.

Regressions that include controls for population, real gross domestic product per capita, land area and oil reserves, particularly (3) and (6), cut down on the dramatic deviation between estimates of the effects of minor and major conflicts, as in (2) and (5). This suggests that the inconsistency between estimates of the effects of minor and major conflicts in (2) and (5) is a result of those estimates absorbing some of the omitted effect of population, real gross domestic product per capita, land area and oil reserves.

The addition of controls for region via region dummies and for year and year squared in (4) makes the estimates of the effects of minor and major conflicts significantly more negative as compared to where a similar regression was run without those controls, as in (3). This is suggestive that both region and time, when omitted, distort the measurement of the effects of conflict in a manner that lessens their negative impact.

Also, the introduction of controls, particularly in (4), (5) and (6) and subsequent regressions modeled after (6), makes the estimates of conflict coefficients more precise.

The models used in regressions (4), (5) and (6), and to a lesser extent (3) are effective in explaining variation in oil output, all having r squared values of greater than 0.800. Variation not explained by the model could result from omitted variables such as a given country's sensitivity to conflict. It would be a mistake to assume that countries react in a uniform manner to conflict, or even that conflict is monolithic.

B. OLS and Fixed Effects Estimates of Conflict on Oil Prices

As declining oil production resulting from conflict might suggest prices, according to estimates of the effects of conflict, increase. Much as was the case with estimates of the effect of conflict on oil output, the effect on oil prices of major conflict was greater than that of minor conflict.

Models estimating the effect of conflict on oil prices were less effective in explaining the variation in prices. While supply plays an important role and conflict appears to have some effect in determining price, demand plays and equally important role. Controls for real gross domestic product per capita, population, country and year fixed effects could conceivably act to some extent as controls for demand. However, unlike supply, there is no way to say exactly what demand is at a given price other than at the actual price, thus making it a difficult factor for which to control. A manifestation of the inefficacy of these controls to act as adequate substitutes for demand controls could be that coefficients estimated for the effect of conflict on oil prices were fairly consistent across regressions with controls.

Across the regressions, no significant results were yielded for conflicts with 25 or fewer battle deaths, whereas estimated coefficients for conflicts with greater than 25 battle deaths were significant in all regressions, save (5), (6) and

(8). These regressions fail to generate any significant estimates, a contrast to their counterparts examining the effect of conflict on oil production. The failure of controls for country and year fixed effects (the common controls in these regressions) to produce significant results in price regressions indicates that while they are effective controls in explaining production (supply) of oil, they are ineffective controls for demand, the determinant of price.

C. OLS and Fixed Effects Estimates of Neighboring Conflict on Oil Output

A significant increase in oil output results from conflict in neighboring countries as Table 4 outlines. In conjunction with Table 2, this suggests that conflict in the country where it occurs effects on oil output (generally negative) is somewhat offset by an increase in oil output in a neighboring country. Conflict in a neighboring country could be a lucrative event. The increase in output diminishes however, when the intensity of the conflict increases each controlled regression showed a lesser effect on oil output for neighbor conflicts with more than 25 battle deaths than those with 25 or fewer battle deaths.

The disparity in magnitude between corresponding intensities of neighbor conflict and domestic conflict was broader than might have been expected (particularly for the gulf high-intensity conflict and neighbor conflict). In each case, the decline in oil production was not matched by the increase in the oil production of a neighboring country. Intuitively, this makes sense—most countries have more than one neighbor, so the decline in oil production in one country could be balanced by an increase in production in several neighboring countries.

The effect of high-intensity neighbor conflict on oil production is dramatically more positive when the regression was limited to the period between 1960 and 1982. The suggestion of this is that either the disruptive effects of conflict were more localized, the positive effects of neighbor conflict were less pronounced, or some combination of the two.

D. OLS and Fixed Effects Estimates of Neighboring Conflict on Oil Prices

Table 5 presents regressions that estimate the effects on oil prices of blends produced in a given country of conflict in an adjacent country. Across several regressions, there was some evidence that the reaction to conflict in a neighboring country was a decline in price. This fits the story told in Table 4, where output generally increased as a result of conflict in a neighboring country. However, the changes in price were not a dramatic as the changes in output were resulting from the same neighboring conflict.

Many of the limitations of pricing regressions discussed in subsection B continue to hold for the results outlined in Table 5, and even to a greater extent. Virtually no significant results were generated. Coefficients for conflict with greater than 25 battle deaths were the only significant results, and only in regressions (1), (2) and (3). However, each of these regressions is significantly limited in their explanatory power, none of them having an r squared value higher than 0.10.

The general tenor of the results is that both intensities of neighbor conflicts have a slight negative effect on oil prices, although early regressions show a slight positive effect. Conflict with 25 or fewer battle deaths registered a positive effect in regressions (1), (2), (3), and (4), but in subsequent regressions hardly showed any effect.

VI. Conclusion and Discussion

Conflict in a country does effect oil production and to a less clear extent, oil prices. Because of the limitations of pricing results, no comments can be offered. Oil output is generally negatively effected by conflict, to the tune of somewhere between 125,000 and 550,000 barrels daily depending on the intensity of the conflict.

Rudimentary arithmetic indicates the cost of this is around $5,000,000-$22,000,000 per day (assuming a price per barrel of $40). While the price responds positively, somewhere in the range of $2-$4 per barrel, a country would need to be producing between 1,125,000 and 2,500,000 barrels daily (roughly the 2007 daily output of Nigeria, Venezuela or Iraq) just to cover the low end of the estimated daily loss from a decline in production.

Even if this oil production is production that is just delayed rather than lost (somewhat of an unlikely proposition, since most country's infrastructure can only support so much production beyond their normal capacity) still incurs significant pecuniary losses. Assuming an interest rate of 5%, there is a loss of $250,000 to $1.1 million per day.

A country's oil output increases as a result of a conflict in a neighboring country, ranging from 14,000 to almost 300,000 barrels daily depending on the intensity of the conflict. It is unclear how price reacts to conflict in a neighboring country, as some regressions show a slightly positive effect, while others show a slightly negative one. Simple arithmetic shows that the benefit of a neighbor conflict is a not insignificant sum, somewhere between $560,000 and $12 million per day.

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VIII. Tables and Figures

Table 1: Sample Means

Variable	Mean
Neighbor Conflicts w/ ≤25 Battle Deaths	0.2824
Neighbor Conflicts w/ >25 Battle Deaths	0.2203
Conflicts w/ ≤25 Battle Deaths	0.1115
Conflicts w/ >25 Battle Deaths	0.0985
Population	70500000
Real Gross Domestic Product per Capita	7153.9
Land Area	1942209
Country Oil Reserves	
Oil Prices	26.01
Oil Production	1441.09

Table 2: OLS and Fixed Effects Estimates of Effect of Conflict on Oil Output

	(1)	(2)	(3)	(4)	(5)	(6)	(7) 1960-1982	(8) 1983-2006	(9) Africa & Middle East	(10) Excl. Africa & Middle East
Conflicts w/ ≤25	33.6	117.2	27.8	-126.8	-249.6*	-124.7	-5.1	-81.9	-128.2	-196.8
Battle Deaths	(165.5)	(127.3)	(144.2)	(86.5)	(84.1)	(73.9)	(60.1)	(76.6)	(96.9)	(112.8)
Conflicts w/ >25	-313.2*	-96.2	-20.1	-193.3	-543.7*	-252.6*	116.4	-222.8*	-312.1*	-208.7
Battle Deaths	(146.4)	(112.6)	(137.9)	(108.3)	(95.8)**	(97.5)	(74.4)	(103.6)	(125.4)	(155.9)
Controls for . . .										
Pop, GDP, & Land Area		Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes
Country Oil Reserves			Yes	Yes		Yes	Yes	Yes	Yes	Yes
Oil Prices & Global Output			Yes	Yes						
Region Dummies				Yes						
Year & Year^2				Yes						
Country FEs					Yes	Yes	Yes	Yes	Yes	Yes
Year FEs					Yes	Yes	Yes	Yes	Yes	Yes
R^2	0.00	0.28	0.82	0.95	0.90	0.95	0.99	0.96	0.92	0.96

Units: Thousands of barrels daily

Table 3: OLS and Fixed Effects Estimates of Conflict on Oil Prices

	(1)	(2)	(3)	(4)	(5)	(6)	(7) Africa & Middle East	(8) Excl. Africa & Middle East
Conflicts w/ ≤25	1.4	0.8	0.6	1.0	-0.0	-0.0	-0.2	0.0
Battle Deaths	(2.2)	(0.9)	(1.0)	(0.8)	(0.2)	(0.2)	(0.2)	(0.6)
Conflicts w/ >25	-4.6*	4.0*	4.0*	2.3*	-0.5	-0.5	-1.2*	-0.2
Battle Deaths	(1.6)	(1.6)	(1.7)	(1.1)	(0.2)	(0.3)	(0.4)	(0.5)
Controls for . . .								
Pop, GDP, & Land Area		Yes	Yes	Yes		Yes	Yes	Yes
Country Oil Reserves			Yes	Yes		Yes	Yes	Yes
Oil Prices & Global Output			Yes	Yes				
Region Dummies				Yes				
Year & Year^2				Yes				
Country FEs					Yes	Yes	Yes	Yes
Year FEs					Yes	Yes	Yes	Yes
R^2	0.01	0.08	0.10	0.53	0.99	0.94	0.99	0.91

Units: Dollars per barrel

Table 4: OLS and Fixed Effects Estimates of Effect of Neighboring Conflict on Oil Output

	(1)	(2)	(3)	(4)	(5)	(6)	(7) 1960-1982	(8) 1983-2006	(9) .frica & Midd East	(10) Excl. Africa & Middle Eas
Neighbor Conflicts	20.7	278.9*	49.3	15.4	216.6*	173.1*	39.4	54.9	102.9	256.7*
w/ ≤25 Battle Deaths	(109.3)	(125.8)	(127.8)	(80.4)	(58.4)	(70.8)	(166.3)	(60.0)	(112.0)	(78.9)
Neighbor Conflicts	220.9	204.8	-6.1	25.6	37.6	134.4*	272.6*	55.4	36.9	327.3*
w/ >25 Battle Deaths	(123.8)	(144.1)	(156.5)	(91.4)	(60.9)	(65.4)	(127.4)	(68.5)	(92.0)	(93.0)
Conflicts	18.1	95.4	28.5	-131.8	-265.2*	-144.0	-0.5	-88.3	-125.6	-228.6*
w/ ≤25 Battle Deaths	(168.0)	(128.6)	(148.4)	(87.4)	(84.0)	(75.1)	(68.4)	(78.3)	(96.6)	(110.1)
Conflicts	-328.8*	-124.1	3.3	-182.5	-551.2*	-249.7*	127.8	-224.0*	-298.9*	-136.7
w/ >25 Battle Deaths	(149.8)	(115.8)	(158.3)	(121.1)	(94.5)	(97.8)	(80.1)	(109.6)	(126.5)	(156.4)
Controls for . . .										
Pop, GDP, & Land Area		Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes
Country Oil Reserves			Yes	Yes		Yes	Yes	Yes	Yes	Yes
Oil Prices & Global Output			Yes	Yes						
Region Dummies				Yes						
Year & $Year^2$				Yes						
Country FEs					Yes	Yes	Yes	Yes	Yes	Yes
Year FEs					Yes	Yes	Yes	Yes	Yes	Yes
R^2	0.00	0.28	0.82	0.95	0.90	0.95	0.99	0.96	0.92	0.96

Units: Thousands of barrels daily

Table 5: OLS and Fixed Effects Estimates of Neighboring Conflict on Oil Prices

	(1)	(2)	(3)	(4)	(5)	(6)	(7) Africa & Midd East	(8) Excl. Africa & Middle Eas
Neighbor Conflicts	0.3	0.6	0.8	-0.5	-0.5	-0.2	-0.2	-0.2
w/ ≤25 Battle Deaths	(1.7)	(0.8)	(0.9)	(0.6)	(0.3)	(0.2)	(0.2)	(0.4)
Neighbor Conflicts	0.2	0.4	0.3	0.1	-0.5	-0.2	-0.2	-0.1
w/ >25 Battle Deaths	(1.8)	(0.8)	(0.9)	(0.6)	(0.2)	(0.2)	(0.2)	(0.5)
Conflicts	1.5	0.8	0.6	1.0	0.0	0.0	-0.1	0.1
w/ ≤25 Battle Deaths	(2.2)	(1.0)	(1.1)	(0.9)	(0.2)	(0.2)	(0.2)	(0.6)
Conflicts	-4.4*	4.3*	4.4*	2.1	-0.6	-0.6	-1.2	-0.3
w/ >25 Battle Deaths	(1.7)	(1.6)	(1.7)	(1.1)	(0.3)	(0.3)	(0.4)	(0.6)
Controls for . . .								
Pop, GDP, & Land Area		Yes	Yes	Yes		Yes	Yes	Yes
Country Oil Reserves			Yes	Yes		Yes	Yes	Yes
Oil Prices & Global Output			Yes	Yes				
Region Dummies				Yes				
Year & Year^2				Yes				
Country FEs					Yes	Yes	Yes	Yes
Year FEs					Yes	Yes	Yes	Yes
R^2	0.01	0.08	0.10	0.53	0.99	0.94	0.99	0.91

Units: Dollars per barrel

Figure 1:

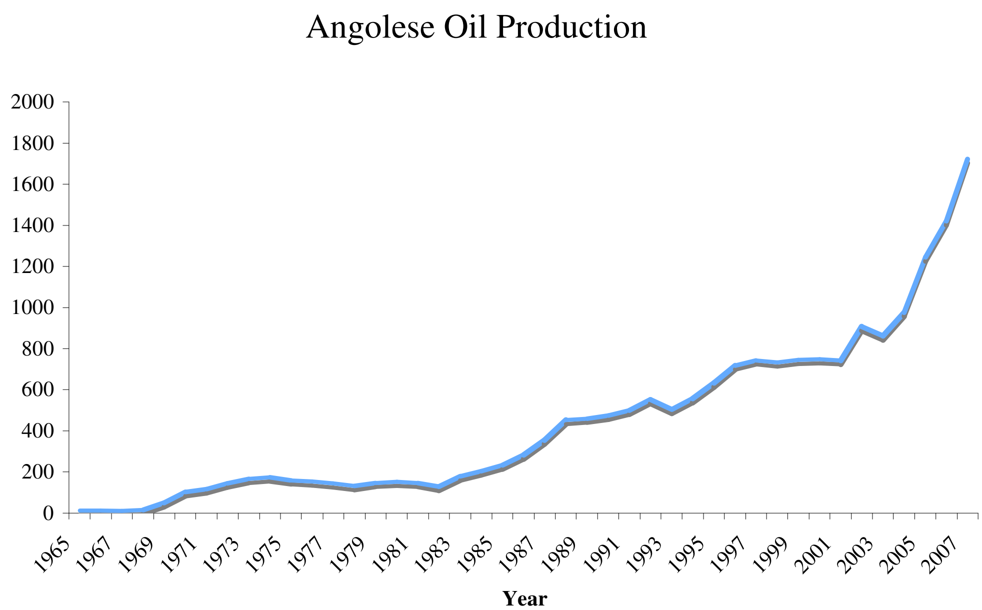

Figure 2: